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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,019	01/26/2001	Frank C. Hoppensteadt	9138-23	6361

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EXAMINER

HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
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2129

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,019

Applicant(s)

HOPPENSTEADT ET AL.

Examiner

Joseph P. Hirl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to an AMENDMENT entered August 11, 2006 for the patent application 09/771,019 filed on January 26, 2006.
2. All prior office actions are incorporated this Office Action by reference.

Status of Claims

3. Claims 1-39 are pending in this application.

Drawing Objection

4. Fig. 2 is objected to in that the output of phase shift 24 is not the same as that identified in the specification, @ page 5, equation (1). This objection must be corrected.

Claim Objection

5. The equation of the claim 25 and that of Fig. 2 are of different forms. The gain of the subject claim is different from that of both the specification, equation (1) and that of Fig. 2. This objection must be corrected.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-39 and especially 7, 8, 17, 22, 23, 24, 26, 29 and 32 are rejected under 35 U.S.C. 112, first paragraph, because the best mode contemplated by the inventor has not been disclosed. Evidence of concealment of the best mode is based upon applicant's statement in the specification @ page 2, lines 3-6, stating:

Because of their ability to simulate the apparent oscillatory nature of brain neurons, oscillatory neural network computers are among the more promising of neural network computers. Simply stated, the elements of an oscillatory neural network computer consist of oscillators rather than amplifiers or switches.

Incorporation of linear amplifiers such as shown in Fig. 2 is inconsistent with applicants statement involving the more promising types of neural network computers. The subject claims all relate to an oscillatory neural network computer illustrated on Fig. 1 with weighting circuit illustrated in Fig. 2 having linear amplifier 23.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-5, 9-39 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility.

Claim 1: limits "the weighting network ... having outputs operably coupled to inputs of the phase-locked loops." Fig. 1 requires a BPF.

Claim 2: limits "... the second input terminal of the first adder circuit coupled to the input terminal of the second weighting circuit ..." Fig. 2 requires coupling to the output terminal of the second weighting circuit.

Claim 3: limits "... the second input terminal of the second adder circuit coupled to the input terminal of the fourth weighting circuit ..." Fig. 2 requires coupling to the output terminal of the fourth weighting circuit.

Claims 5, 10, 16, 31: limits "first initialization input terminal coupled to the first adder circuit." Fig. 1 does not identify such initialization input.

Claim 10: limits "the weighting circuit further includes a plurality of initialization input terminals

Claims 11, 15, 17, 25: limits "... each connector has a phase-encoded connection coefficient ..." ; "... phase-locked loops having a plurality of oscillators operably coupled with said plurality of connectors ..." A connector is typically either an input type or output ... Claim fails to function with an input type connector for the phase-encoded connection coefficient ... wrong connection.

Claim 12: limits: "... a plurality of oscillators operably coupled with said plurality of connectors ... a plurality of adder circuits coupled between the plurality of connectors and said plurality of oscillators." Non-functional arrangement; see Fig. 1 and comments related to claim 11 above.

Claim 13: limits "a plurality of adder circuits coupled between the plurality of connectors and said plurality of oscillators ..." Claim is non-functional on a bypass of BPF.

Claim 15: see comments related to claim 11 above.

Claim 26: limits fail to reflect the disclosed operation of Fig. 1 and Fig. 2.

Claim 27, 30, 32: limits: "...the phase shift circuit is operably coupled to the one of the phase-locked loops through an adder and a band pass filter." If the adder and the band-pass filter run in parallel, the result is non-functional.

Claim 28: the connection strengths are of a different from to that identified in Fig. 2

Claim 29: limitation is simply not what is disclosed in Fig. 1 and Fig. 2 ... non-functional.

Claim 34: limits "...the weighting network being outside the phase-locked circuits and having inputs operably coupled to outputs of the phase-locked loops and having outputs operably coupled to inputs of the phase-locked loops." ... non-functional without adder and BPF.

Claim 35: limits "... a plurality of phase-locked circuits operably coupled with said weighting network, wherein the network comprises a plurality of phase shift circuits each phase shift circuit connected in a weighting circuit external to the phase-locked circuits operably connected to an input of one of the phase-locked loops." Non-functional to that of the disclosure illustrated in Fig. 1 and Fig. 2.

10. Claims 18-24, 36, 37, 38, 39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims recite a signal (that which represents a signal encoded with functional descriptive material ... meaning) which does not fall within any of the categories of patentable subject matter set forth in § 101.

11. Claims 1-35 are rejected under 35 U.S.C. § 101 for nonstatutory subject matter. The computer system must set forth a practical application of § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77. The invention is ineligible because it has not been limited to a substantial practical application. Relationships of circuits, weights and phases are non-statutory.

In determining whether the claim is for a “practical application,” the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather that the final result achieved by the claimed invention is useful, tangible and concrete. If the claim is directed to a practical application of the § 101 judicial exceptions producing a result tied to the physical world that does not preempt the judicial exception, then the claim meets the statutory requirement of 35 U.S. C. § 101.

The invention must be for a practical application and either:

- 1). specify transforming (physical thing – article) or
- 2). have the Final Result (not the steps) achieve or produce a

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useful (specific, substantial and credible),
concrete (substantially repeatable / non unpredictable), and
tangible (real world / non abstract) result
(tangibility is the opposite of abstractness).

A claim that is so broad that it reads on both statutory and non-statutory subject matter, must be amended, and if the specification discloses a practical application but the claim is broader than the disclosure such that it does not require the practical application, then the claim must be amended.

Claims that merely connect networks, circuits and input/outputs do not provided a result that is a practical application.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 1-5, 9-39 are rejected under 35 USC 112, first paragraph because current case law (and accordingly, the MPEP) require such a rejection if a 101 rejection is given because when Applicant has not in fact disclosed the practical application for the invention, as a matter of law there is no way Applicant could have disclosed how to practice the undisclosed practical application. This is how the MPEP puts it:

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("The how to use prong of section 112 **incorporates as a matter of law** the requirement of 35U.S.C. 101 that the specification disclose as a matter of fact a practical utility for the invention.... If the application fails as a matter of fact to satisfy 35 U.S.C. 101, then the application also fails as a matter of law to enable one of ordinary skill in the art to use the invention under 35 U.S.C. § 112."; in re Kirk, '376 F.2d 936, 942, 153 USIPQ 48, 53 (CCPA 1967) ("Necessarily, compliance with § 112 requires a description of how to use presently useful inventions, **otherwise an applicant would anomalously be required to teach how to use a useless invention.**"). See, MPEP 21107.01 (IV), quoting In re Kirk (emphasis added).

Therefore, claims 1-5, 9-39 are rejected on this basis.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 18, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurokawa (IEEE, 0-7803-4122-8/97, A Local Connected Neural Oscillator Network for Sequential Character Segmentation, referred to as **Kurokawa**).

Claim 18

Kurokawa anticipates a method for recognizing an incoming pattern using a neural network computer comprising using a phase deviation between signals representing a learned pattern and signals representing the incoming pattern to create an output signal indicative of the learned pattern (**Kurokawa**, p 838, abstract; p 842, c1:12-19)

Claim 19

Kurokawa anticipates using the phase deviation includes encoding connection coefficients of the neural network computer in accordance with phase representations of the signals representing a learned pattern (**Kurokawa**, p 841, Fig. 5; include related text).

Claim 20

Kurokawa anticipates method for programming a neural network computer comprising encoding connection coefficient of the neural network computer in accordance with phase relationships of signals representing a pattern to be learned (**Kurokawa**, p 838, abstract; p 842; Fig. 5; include related text).

Response to Arguments

16. Response dated August 11, 2006 is acknowledged. Concerning p 10-13, the associative memory concept is not part of the claim limitations. ¶ 20 applies.
17. The product by Process Rejection under 35 USC 102/103(a) is withdrawn.
18. Regarding Supplemental Reasons for Allowance, and as the applicant admits, the abstract is a part of the disclosure and therefore fully usable in the examination process. Such action is fully consistent with the MPEP. The Supplemental Reasons for Allowance remain as part of the record.

Examination Considerations

19. The claims and only the claims form the metes and bounds of the invention.

"Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

20. Examiner's Notes are provided with the cited references to prior art to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

21. Unless otherwise annotated, Examiner's statements are to be interpreted in reference to that of one of ordinary skill in the art. Statements made in reference to the condition of the disclosure constitute, on the face of it, the basis and such would be

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obvious to one of ordinary skill in the art, establishing thereby an inherent prima facie statement.

22. Examiner's Opinion: ¶¶ 17.-19. apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

Conclusion

23. Claims 1-39 are rejected.

Correspondence Information

24. Any inquiry concerning this information or related to the subject disclosure should be directed to the Primary Examiner, Joseph P. Hirl, whose telephone number is (571) 272-3685. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, David R. Vincent can be reached at (571) 272-3080.

Any response to this office action should be mailed to:

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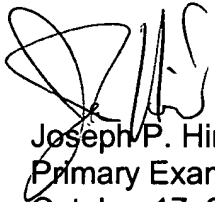
Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 273-8300 (for formal communications intended for entry.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



Joseph P. Hirl
Primary Examiner
October 17, 2006